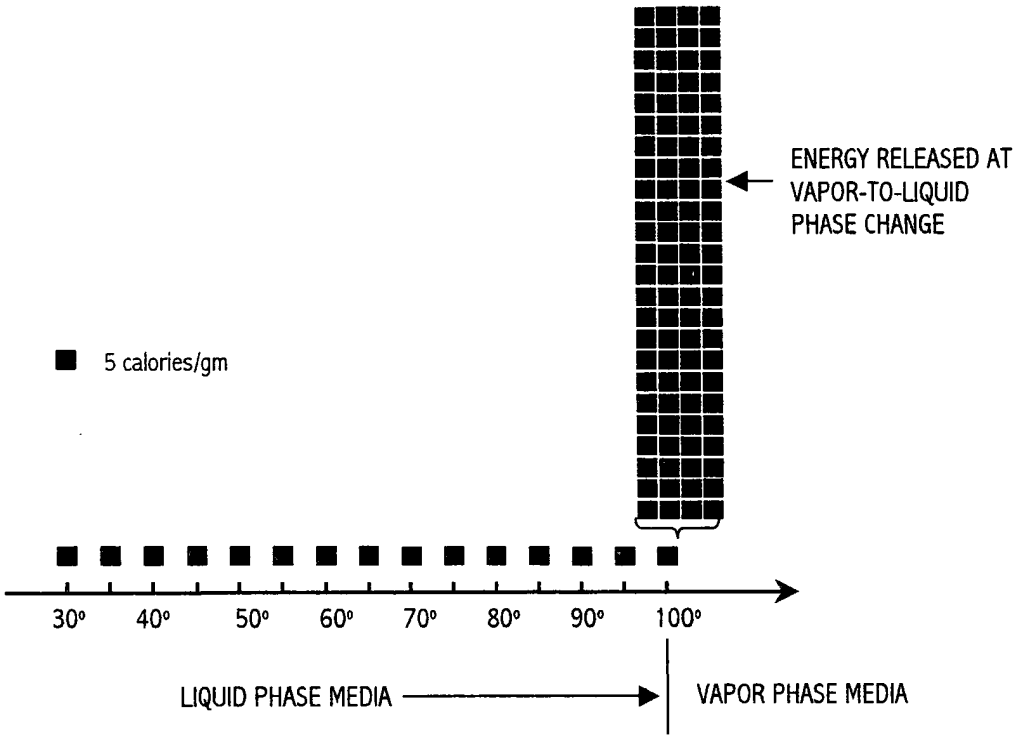

ENERGY RELEASED AT
VAPOR-TO-LIQUID
PHASE CHANGE
5 calories/gm
30°
40°
50°
60°
70°
80°
90°
100°
LIQUID PHASE MEDIA
VAPOR PHASE MEDIA

FIG. 1A

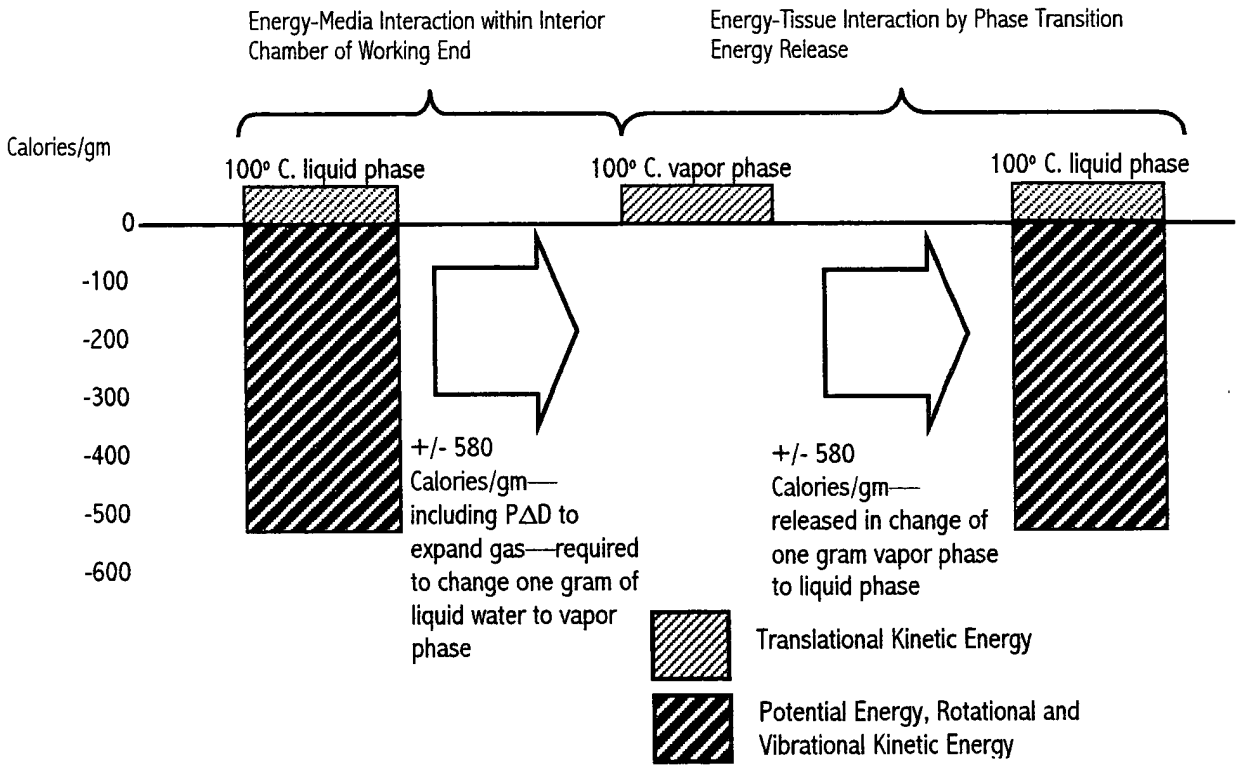

Energy-Media Interaction within Interior Chamber of Working End
Energy-Tissue Interaction by Phase Transition Energy Release
Calories/gm
100° C. liquid phase
100° C. vapor phase
100° C. liquid phase
0
-100
-200
-300
-400
-500
-600
+/- 580 Calories/gm— including PΔD to expand gas—required to change one gram of liquid water to vapor phase
+/- 580 Calories/gm— released in change of one gram vapor phase to liquid phase
Translational Kinetic Energy
Potential Energy, Rotational and Vibrational Kinetic Energy

FIG. 1B

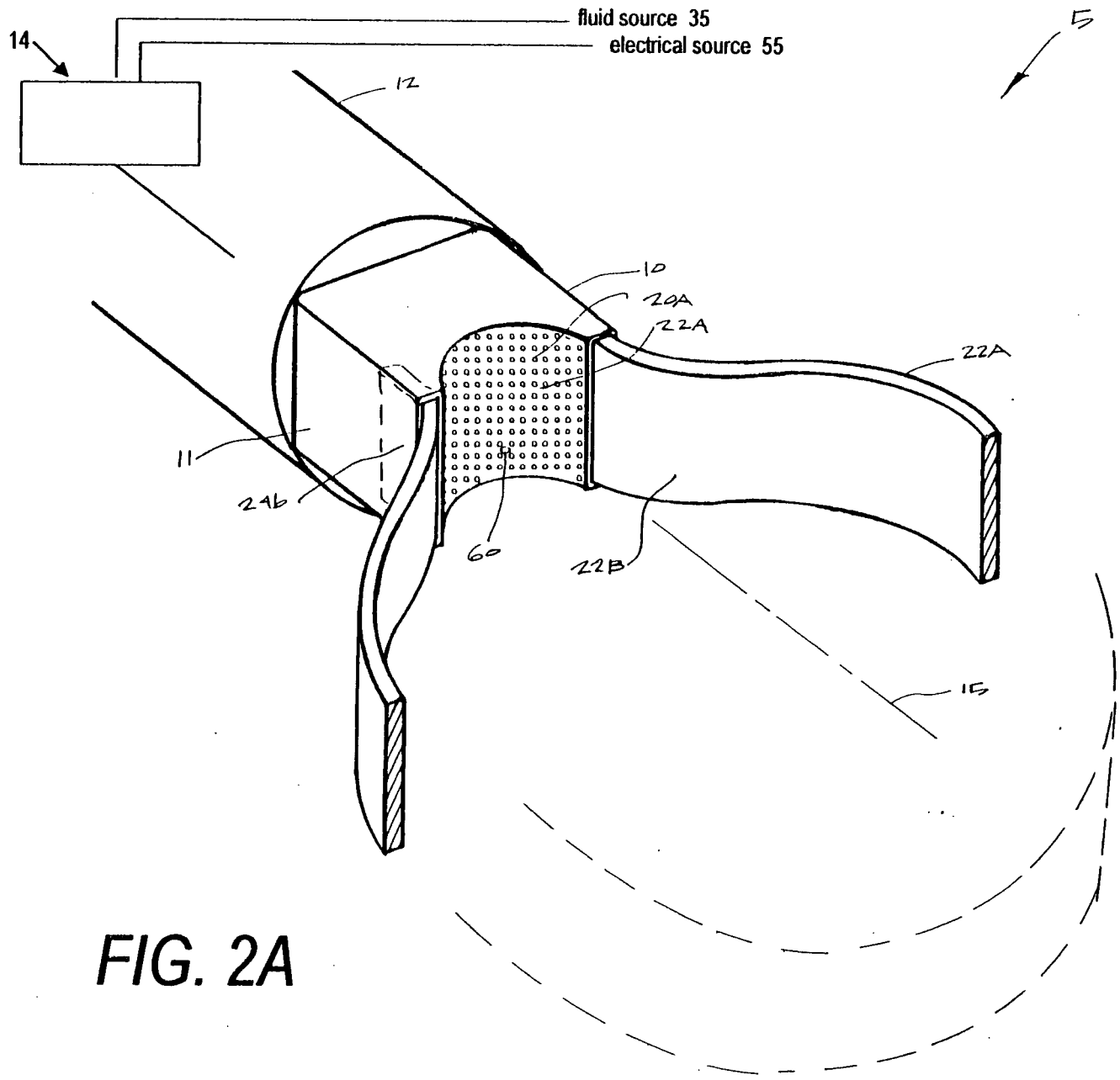

fluid source 35
electrical source 55
14
5
12
10
20A
22A
22A
11
24b
60
22B
15

FIG. 2A

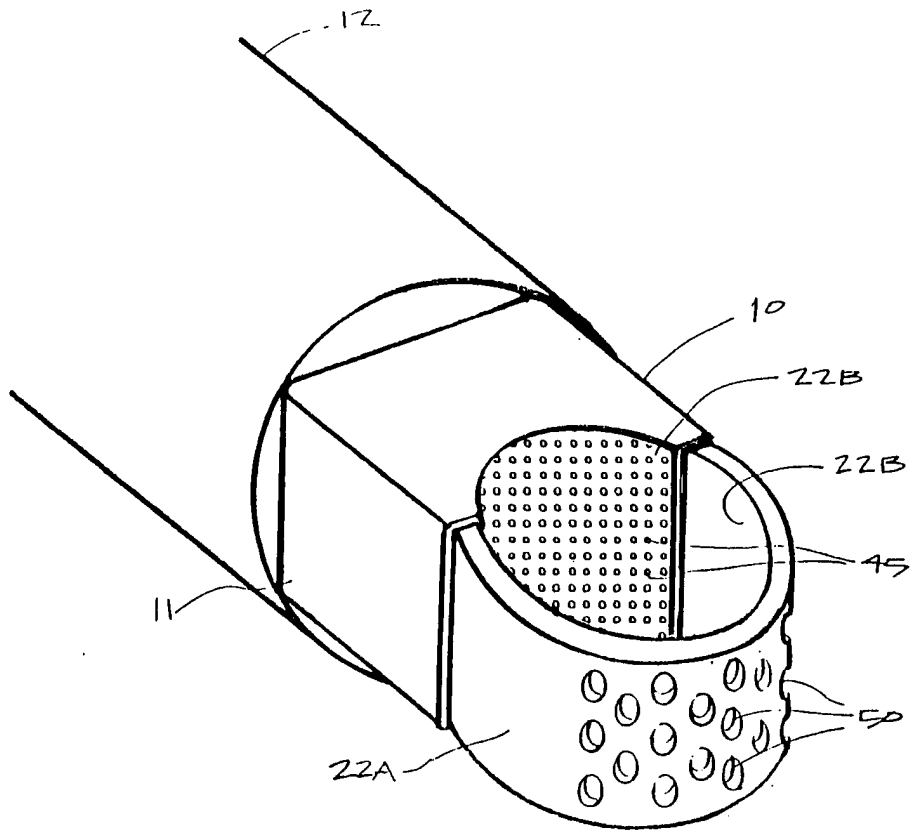


FIG. 2B

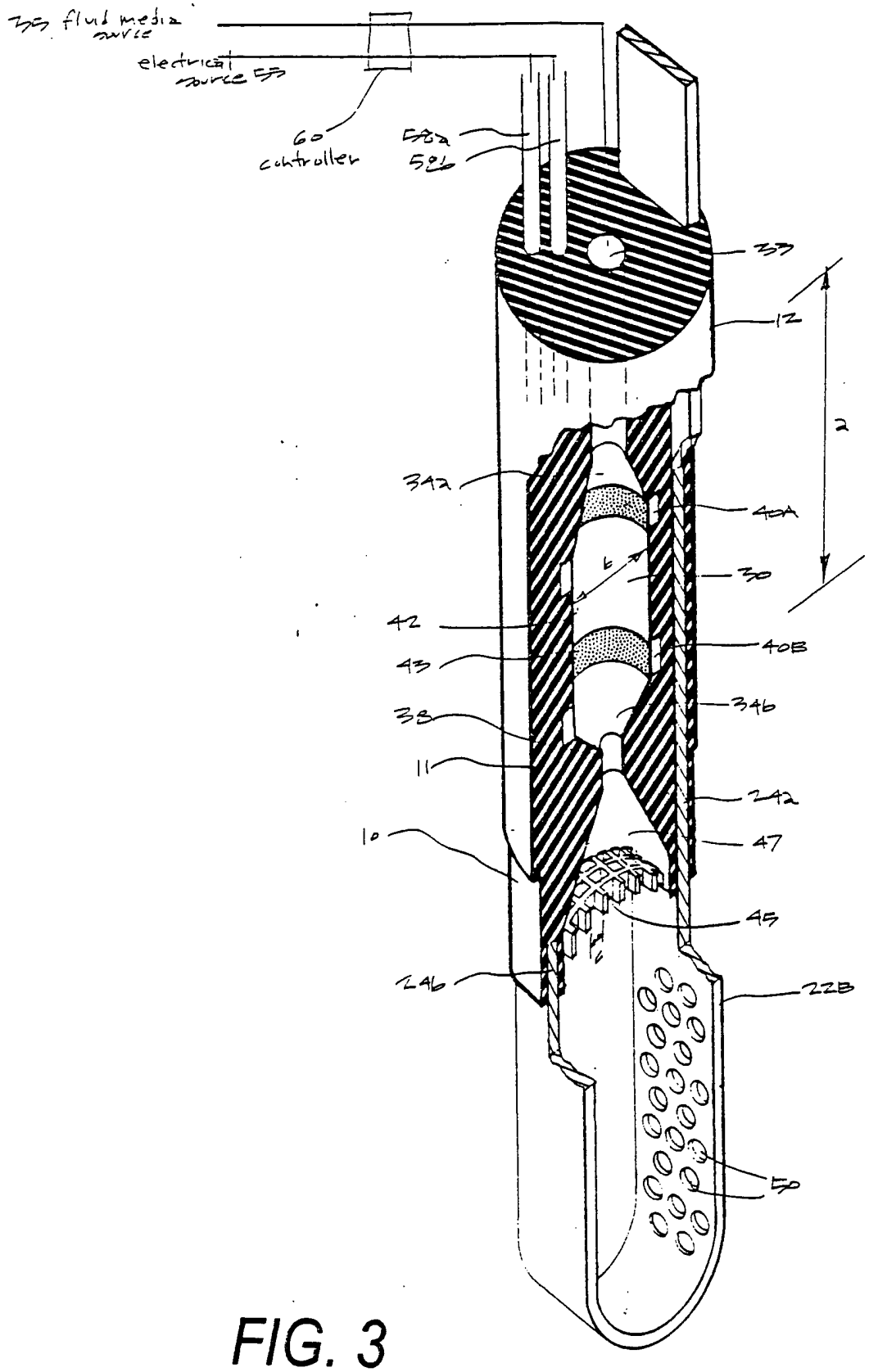

fluid media source
electrical source
60
controller
50a
50b
33
12
2
34a
40A
b
30
42
40B
43
34b
38
11
24a
10
47
45
24b
22B
50

FIG. 3

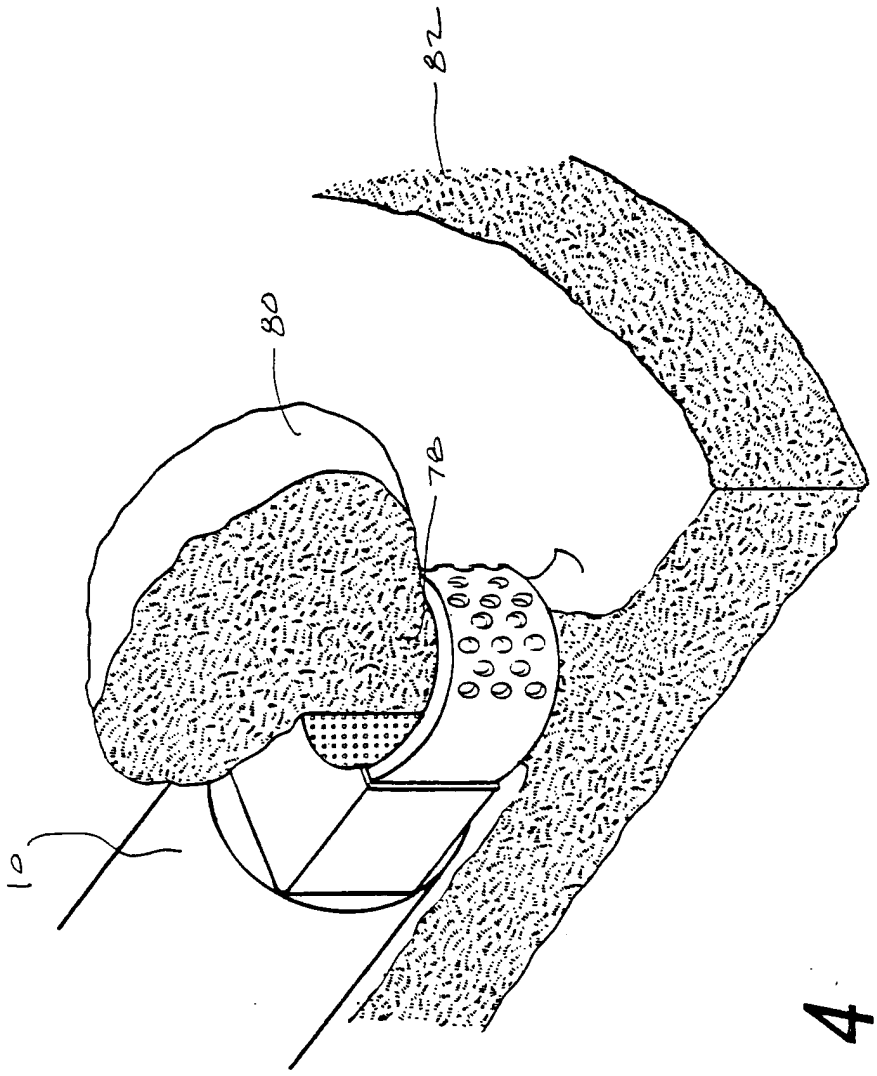
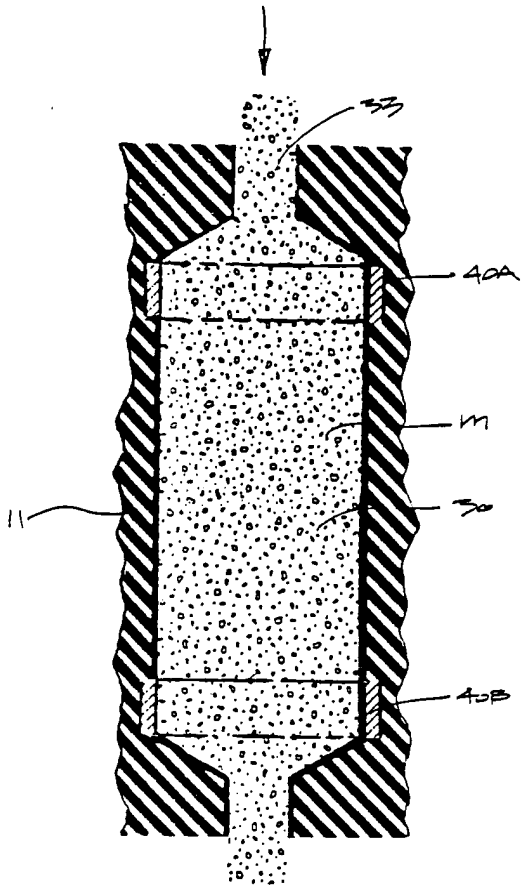


FIG. 4



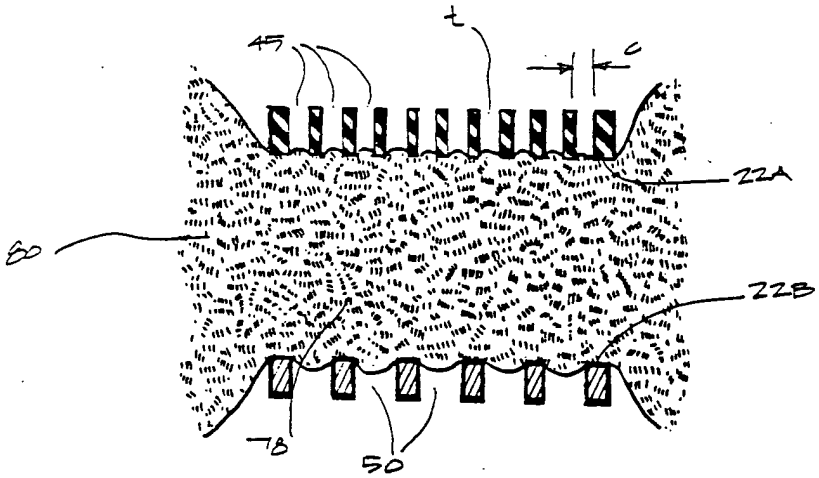


FIG. 5

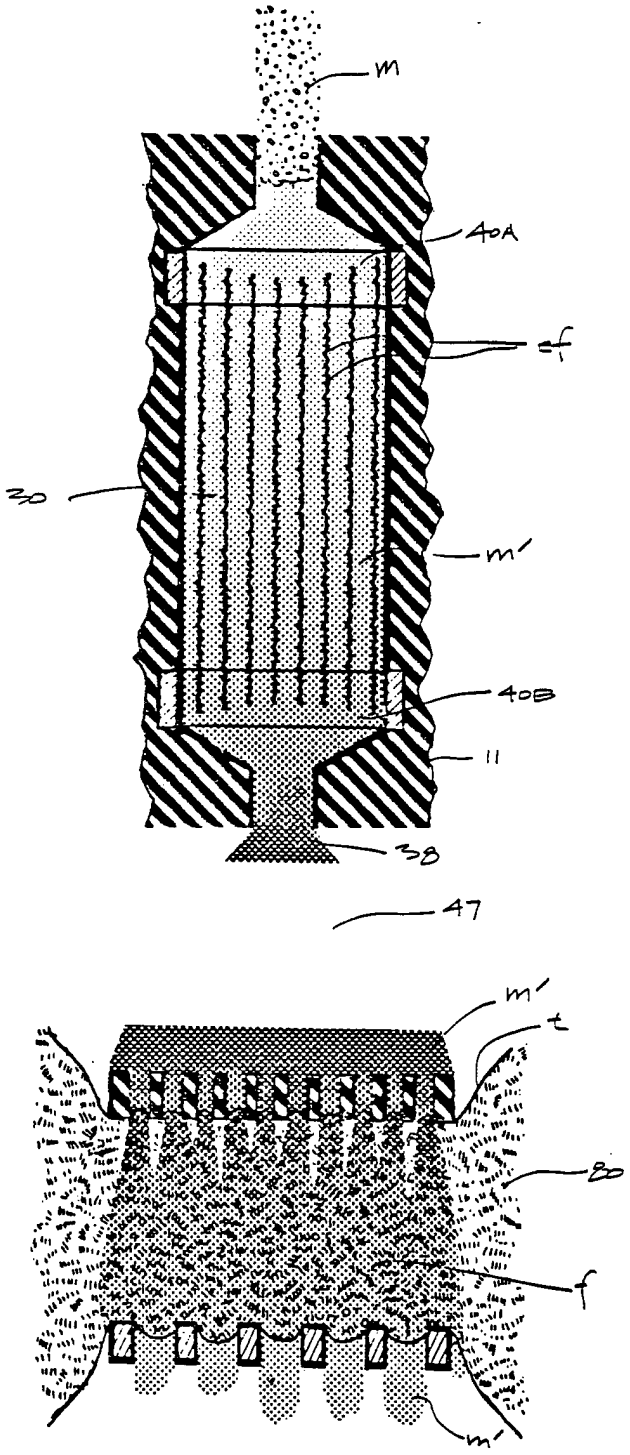


FIG. 6

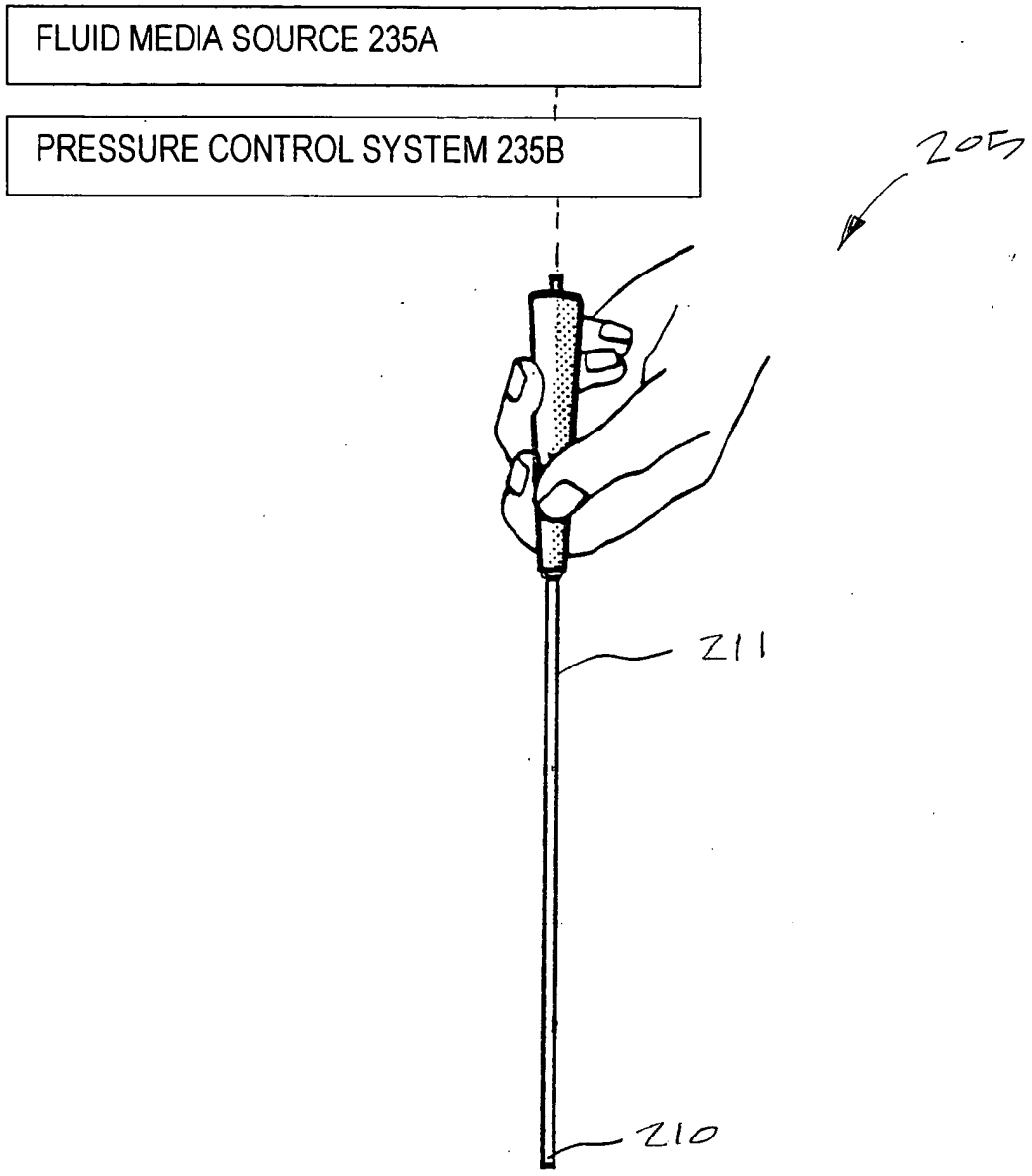

FLUID MEDIA SOURCE 235A
PRESSURE CONTROL SYSTEM 235B
205
211
210

FIG. 7

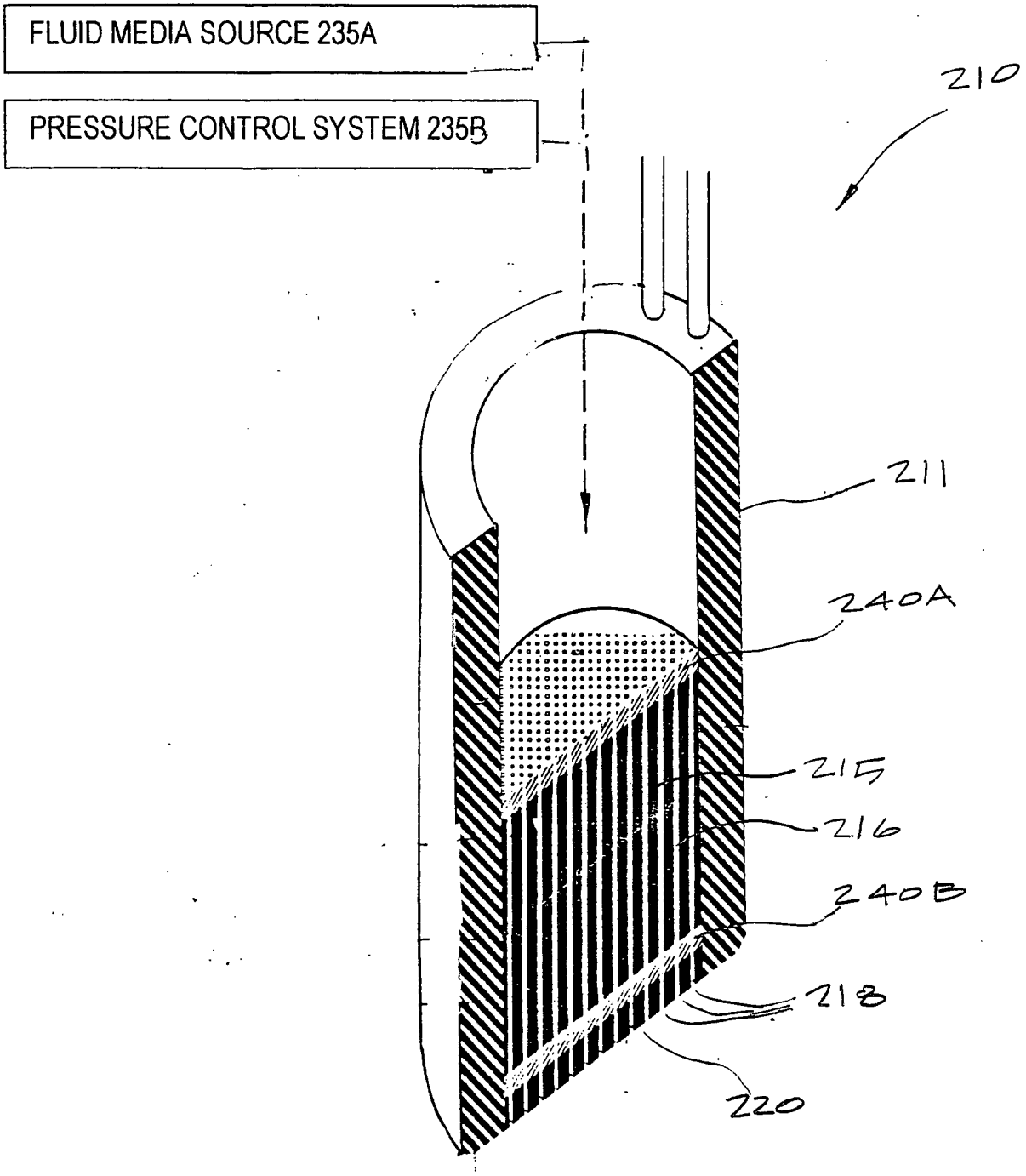

FLUID MEDIA SOURCE 235A
PRESSURE CONTROL SYSTEM 235B
210
211
240A
215
216
240B
218
220

FIG. 8

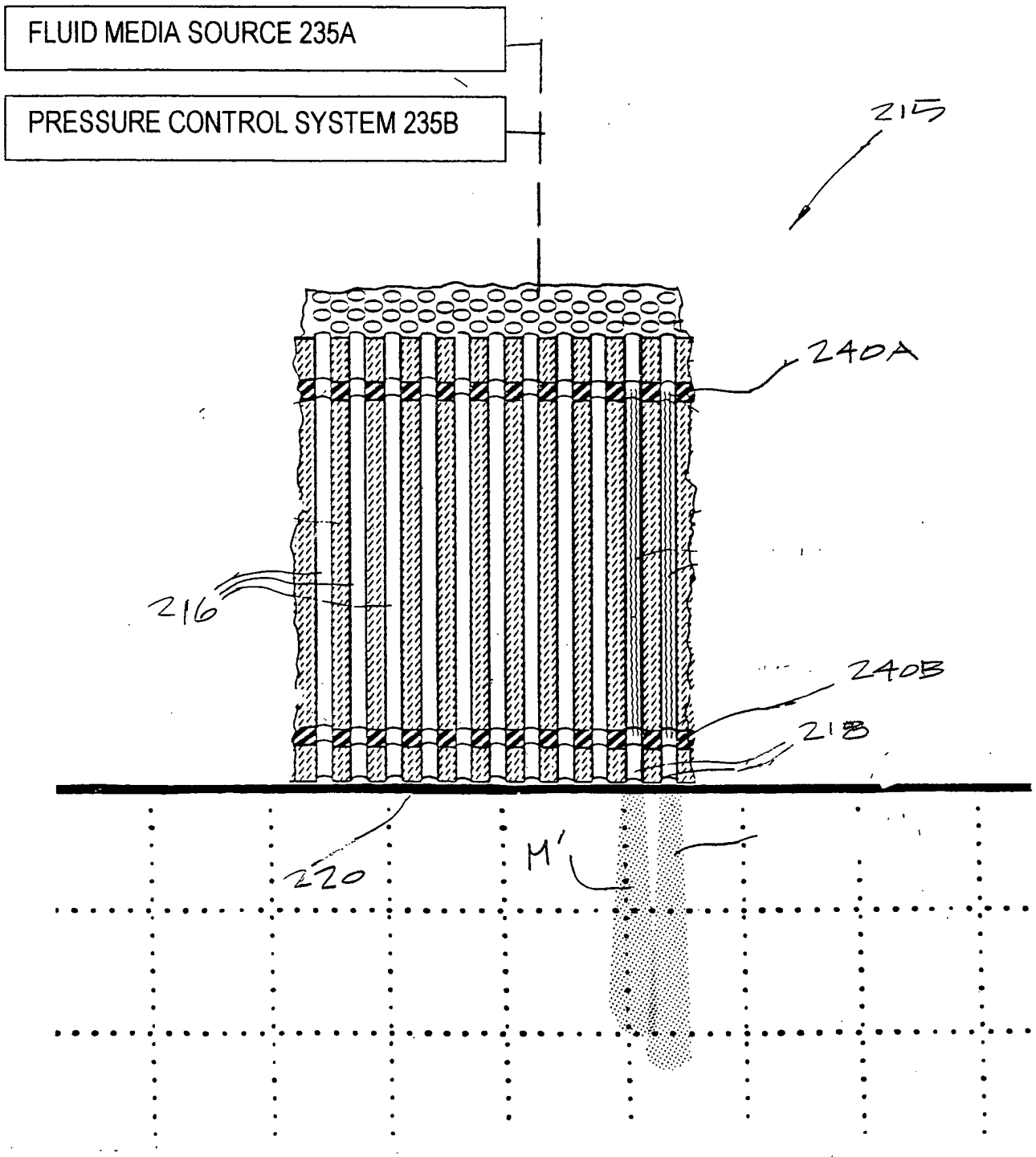

FLUID MEDIA SOURCE 235A
PRESSURE CONTROL SYSTEM 235B
215
240A
216
240B
218
220
M'

FIG. 9

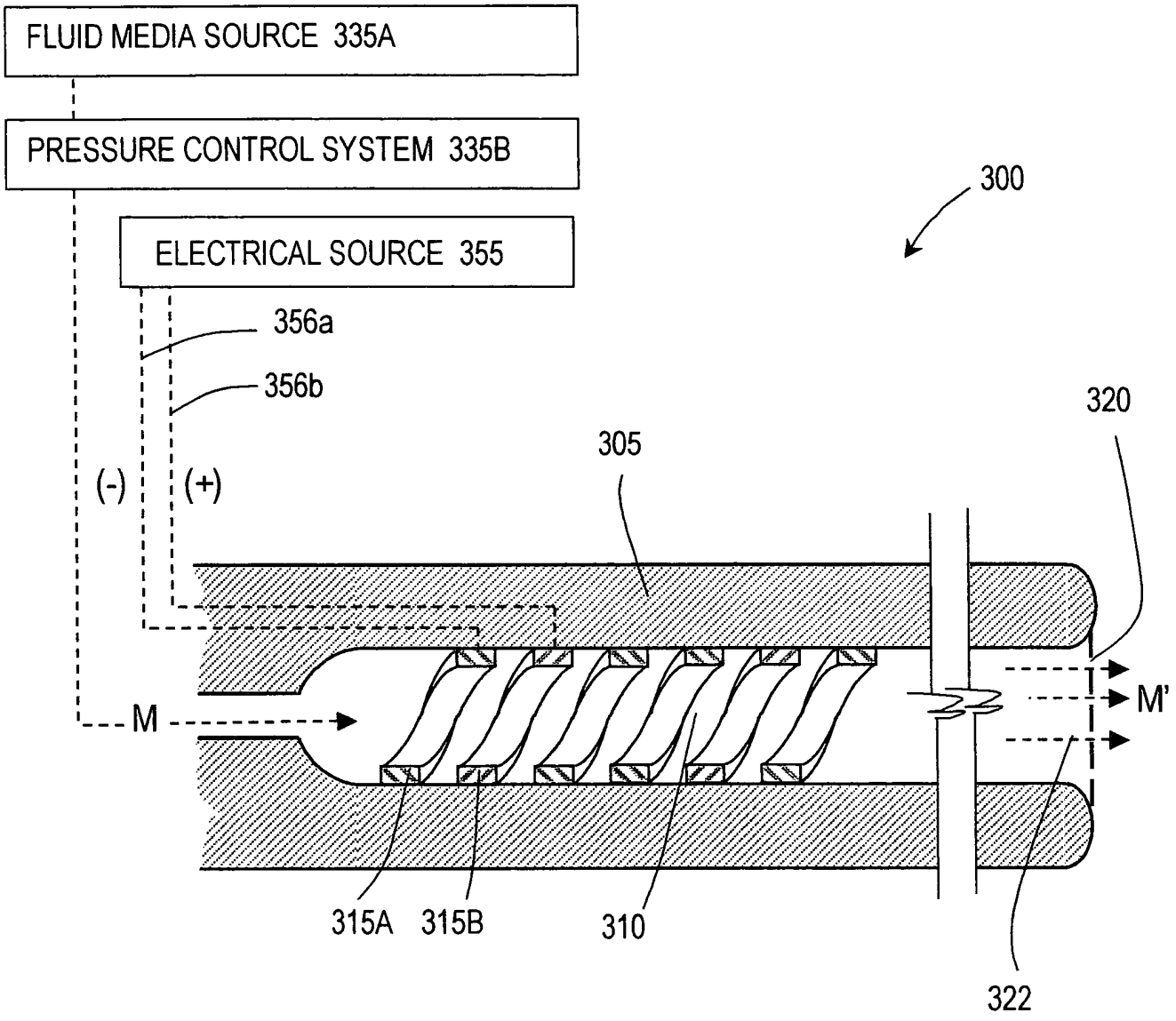

FLUID MEDIA SOURCE 335A
PRESSURE CONTROL SYSTEM 335B
ELECTRICAL SOURCE 355
300
356a
356b
(-)
(+)
305
320
M
M'
315A
315B
310
322

FIG. 10

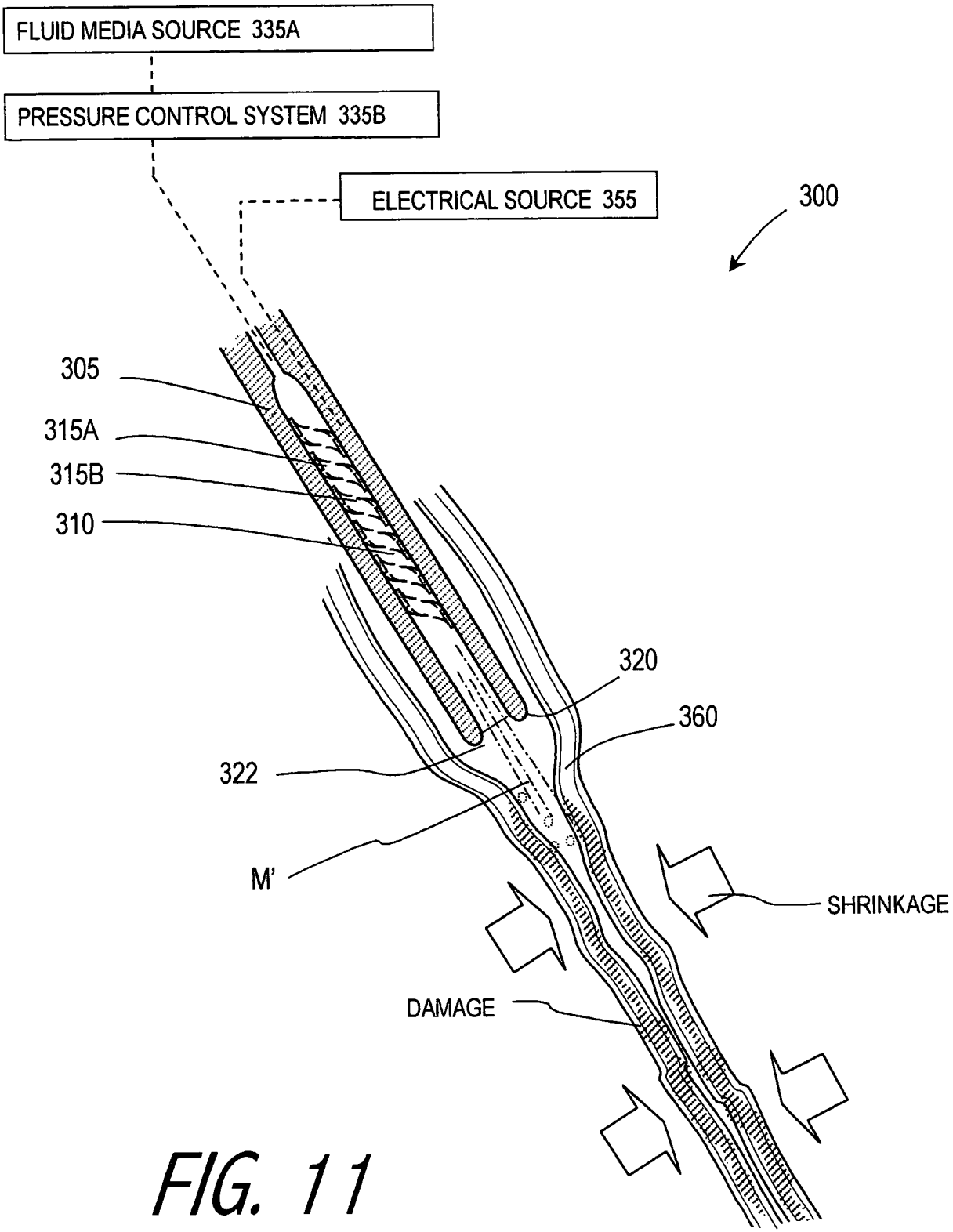

FLUID MEDIA SOURCE 335A
PRESSURE CONTROL SYSTEM 335B
ELECTRICAL SOURCE 355
300
305
315A
315B
310
320
360
322
M'
SHRINKAGE
DAMAGE

FIG. 11

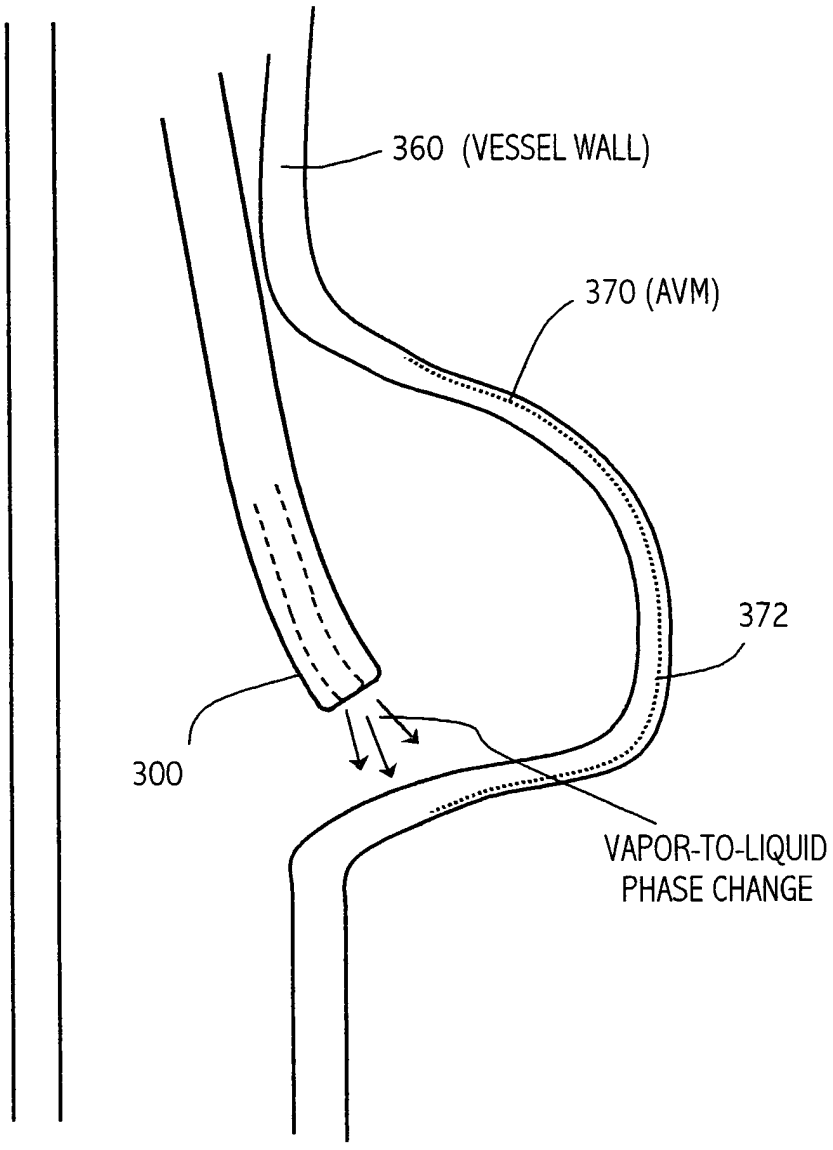


FIG. 12

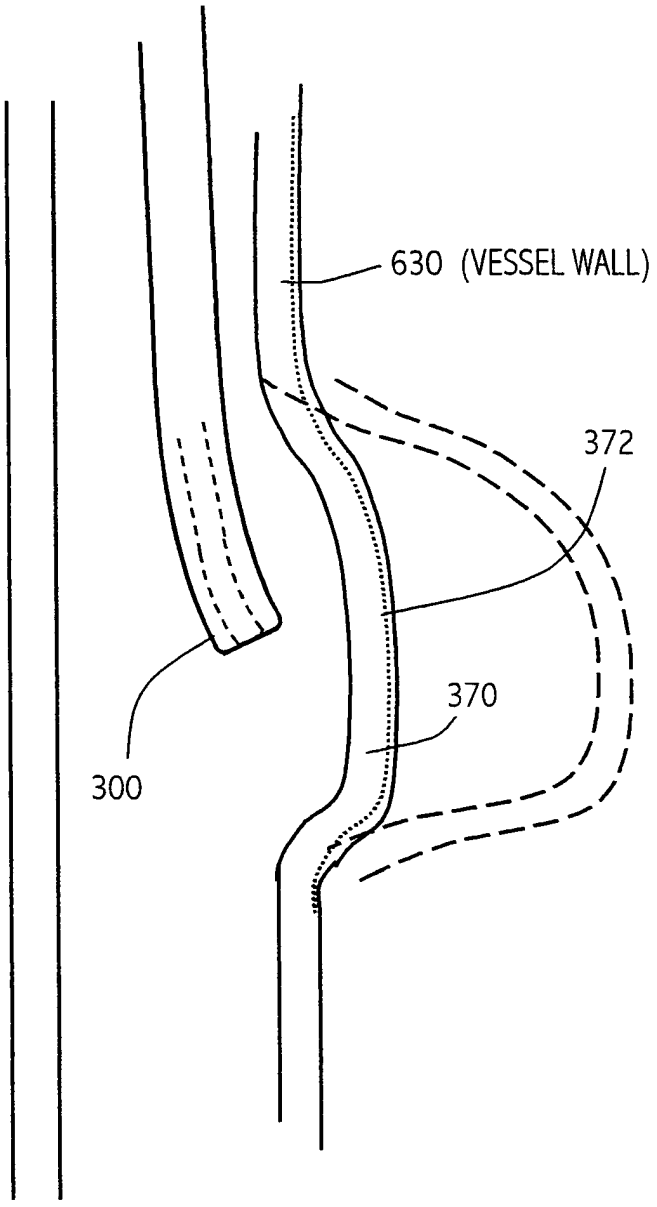


FIG. 13

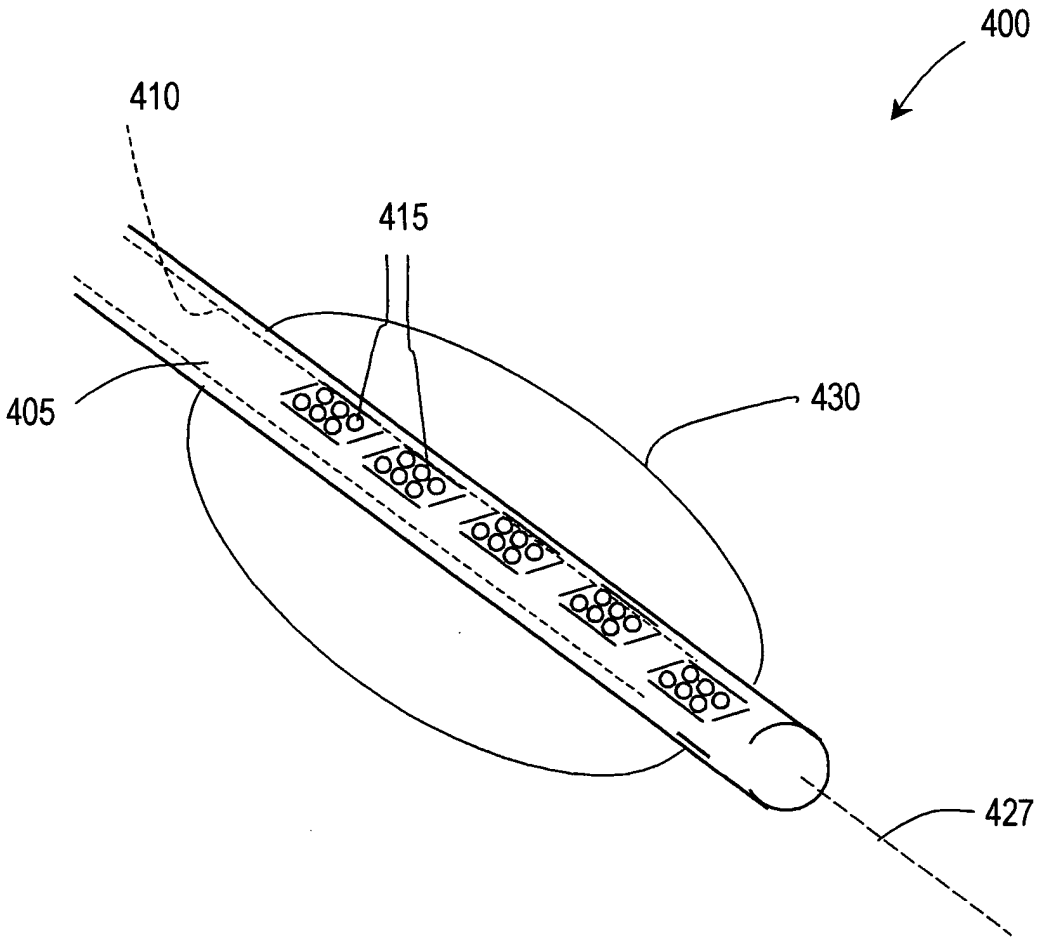


FIG. 14

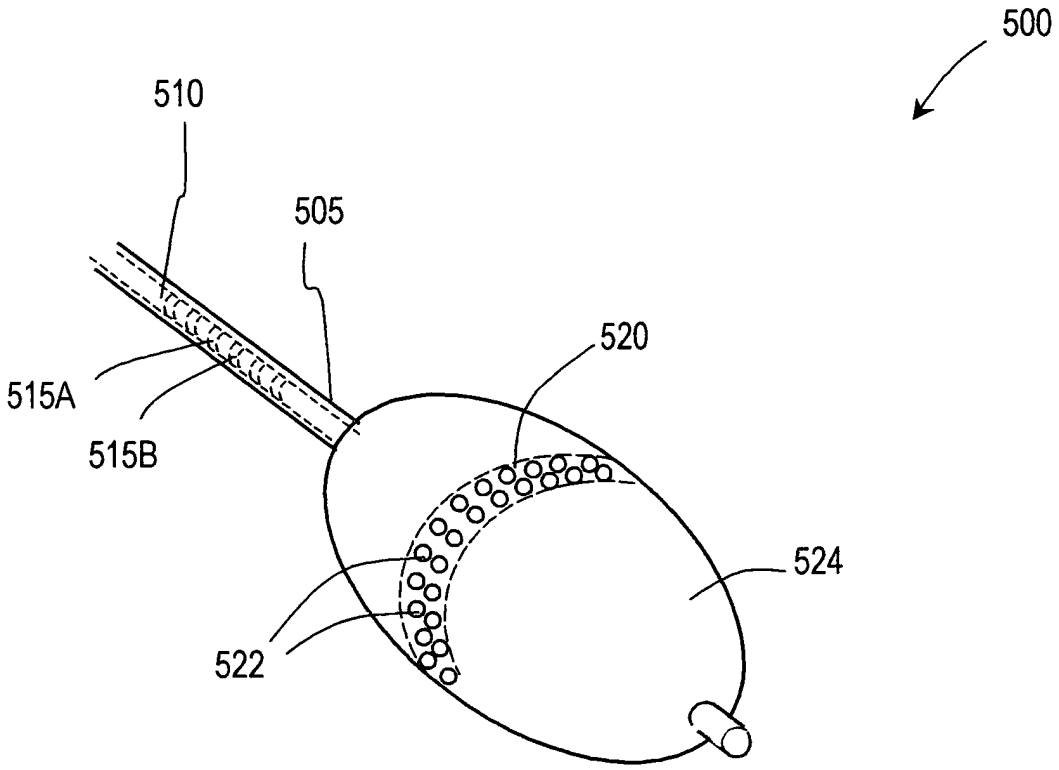


FIG. 15

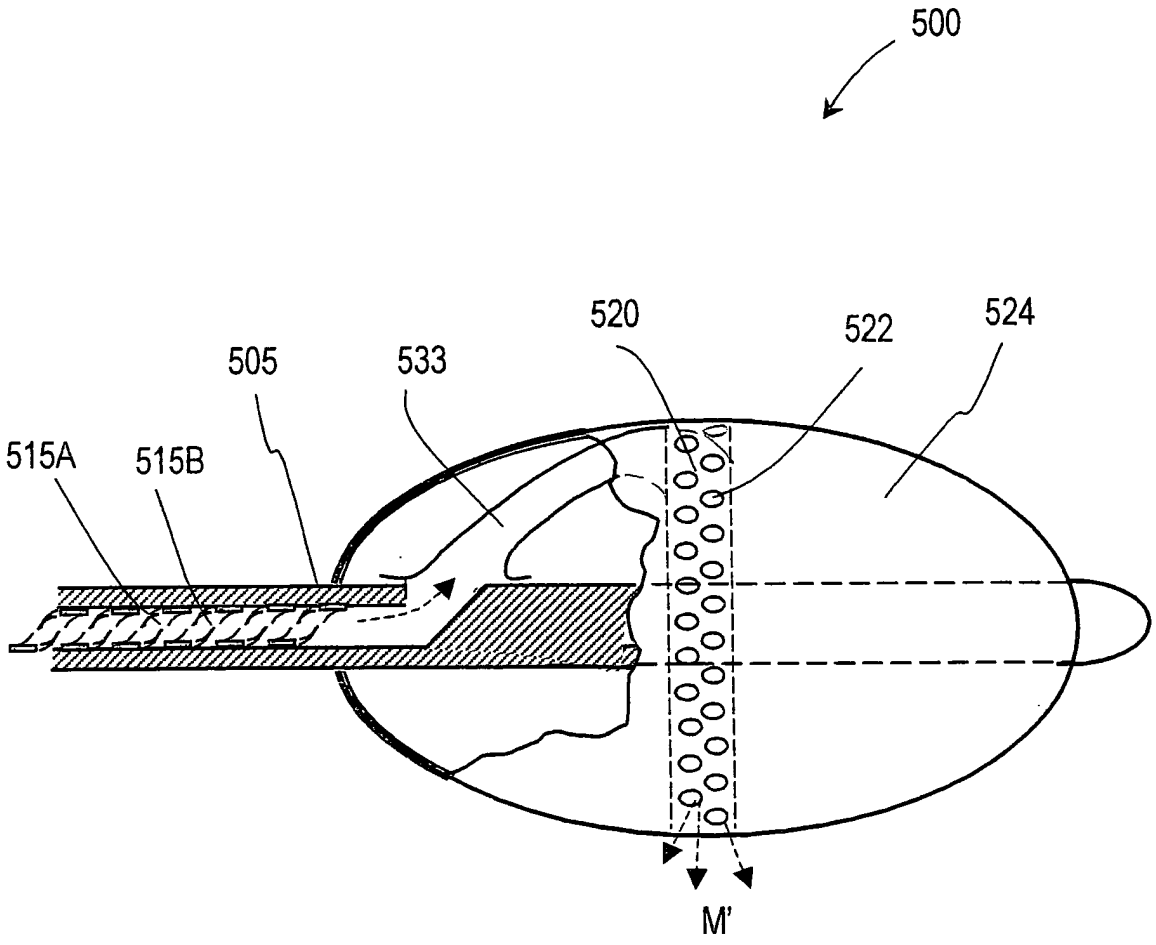


FIG. 16

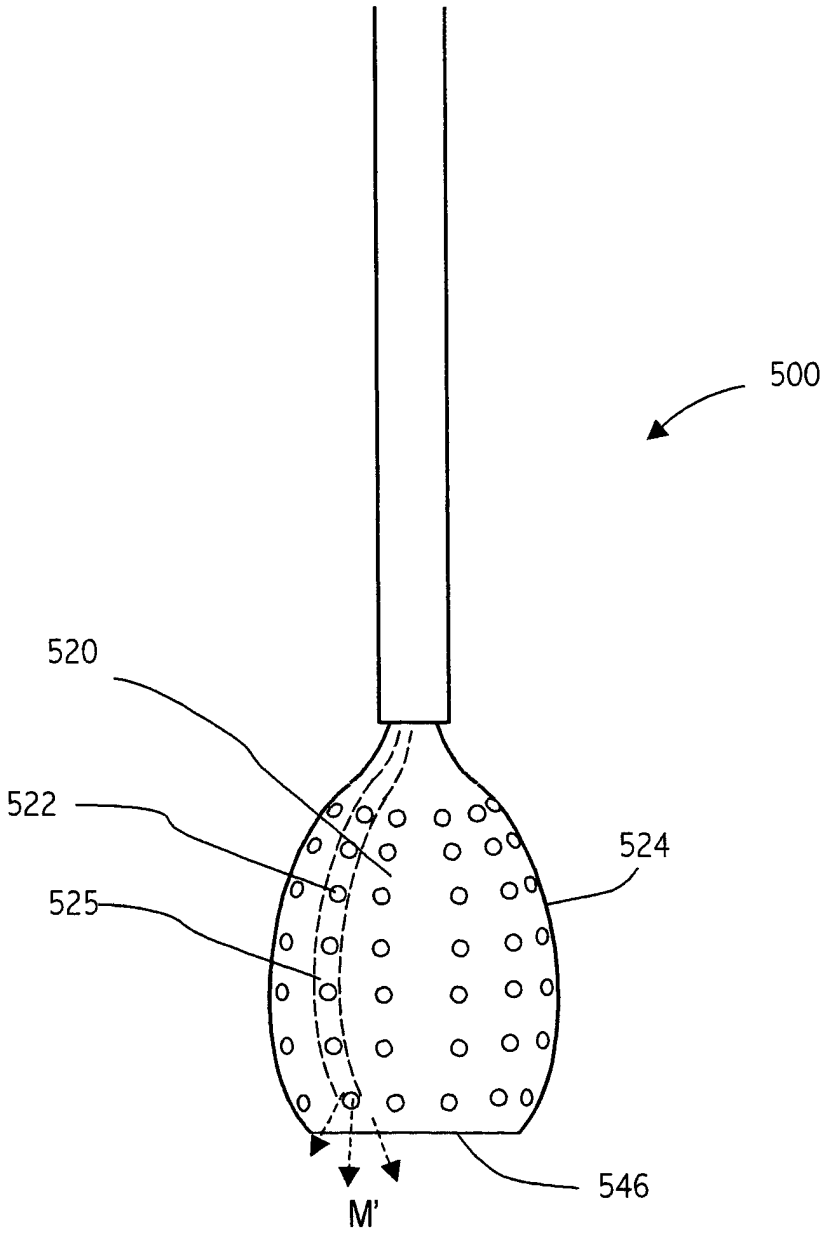


FIG. 17

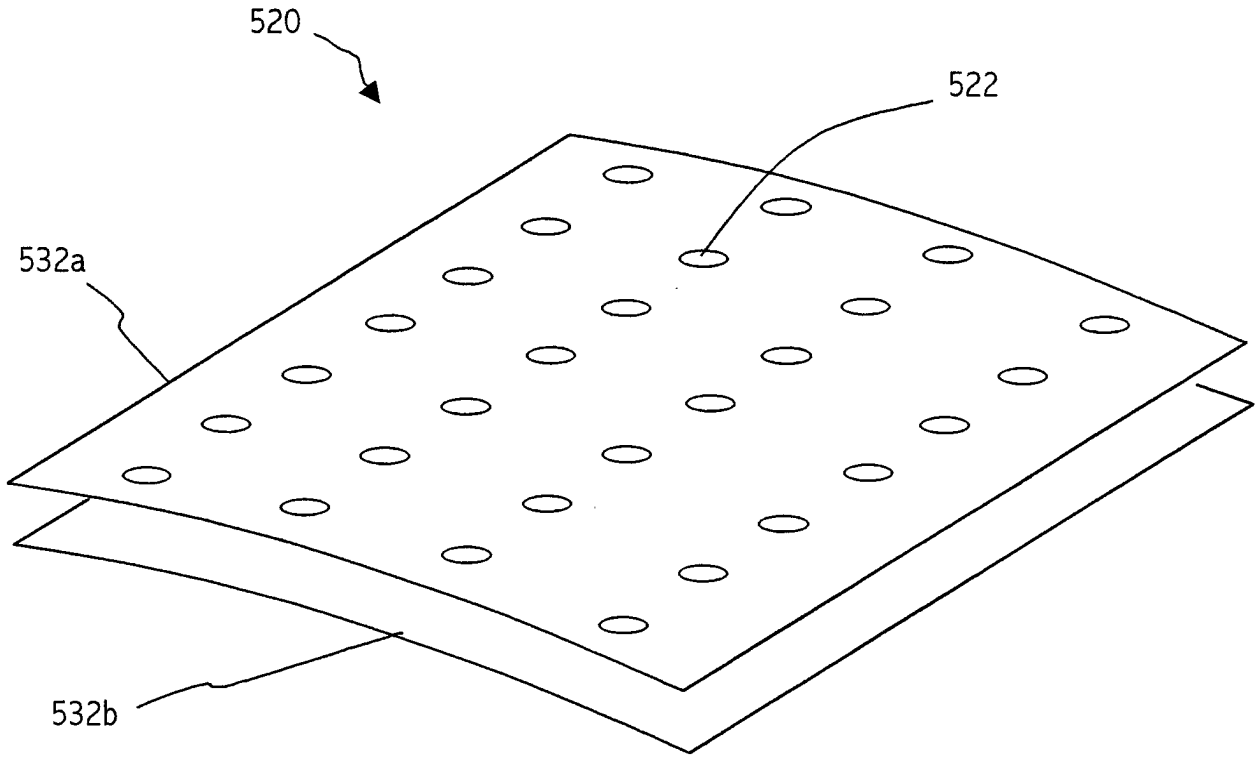


FIG. 18A

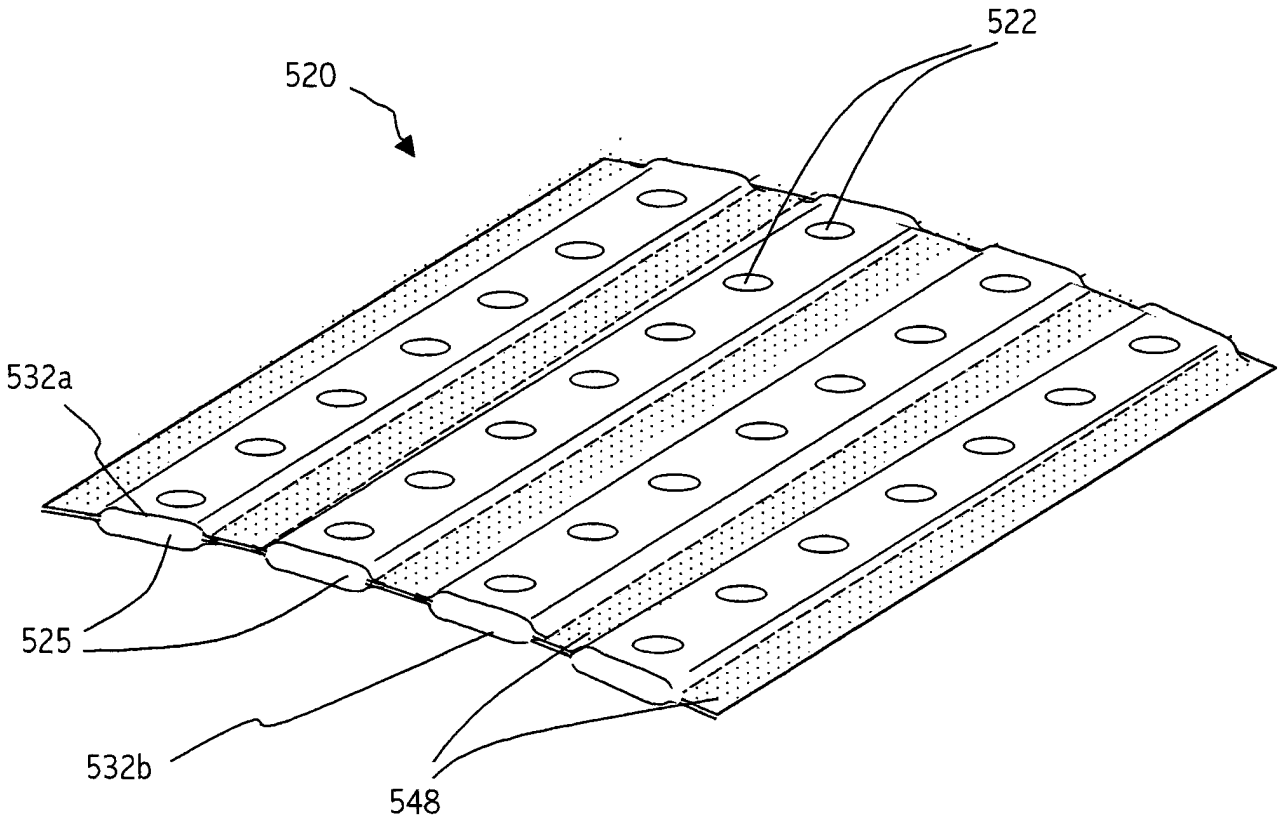


FIG. 18B

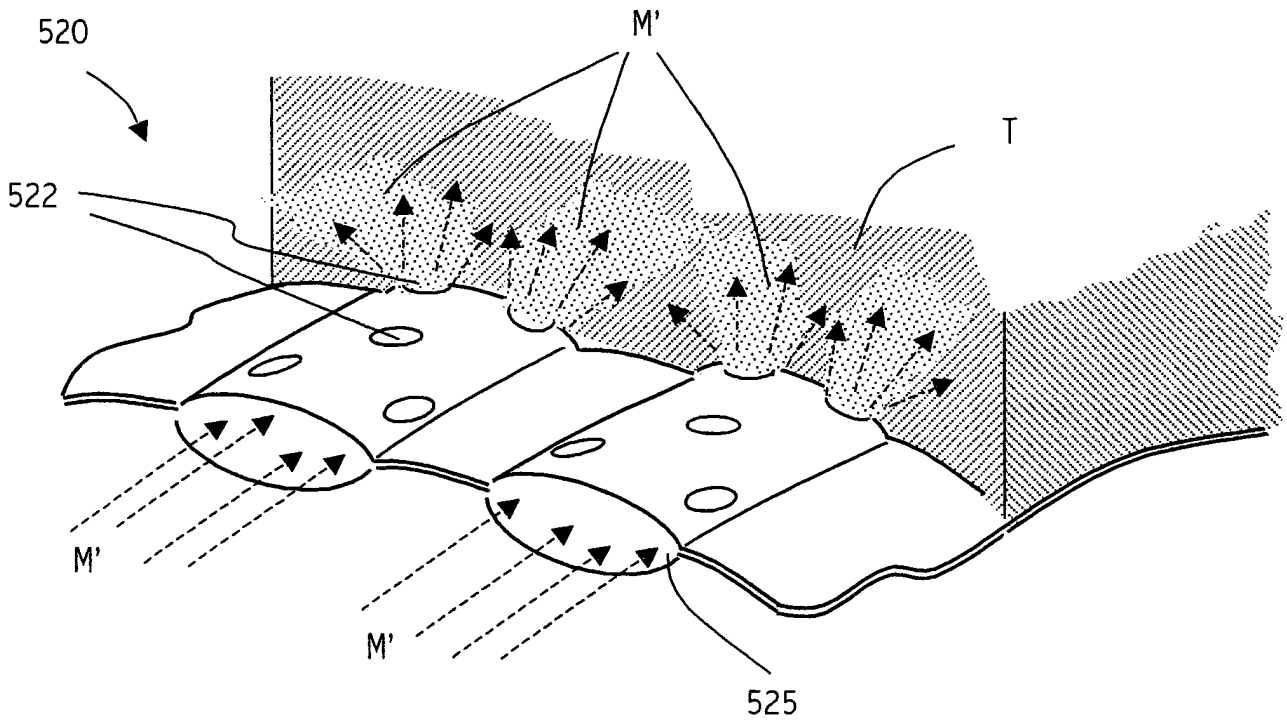


FIG. 19

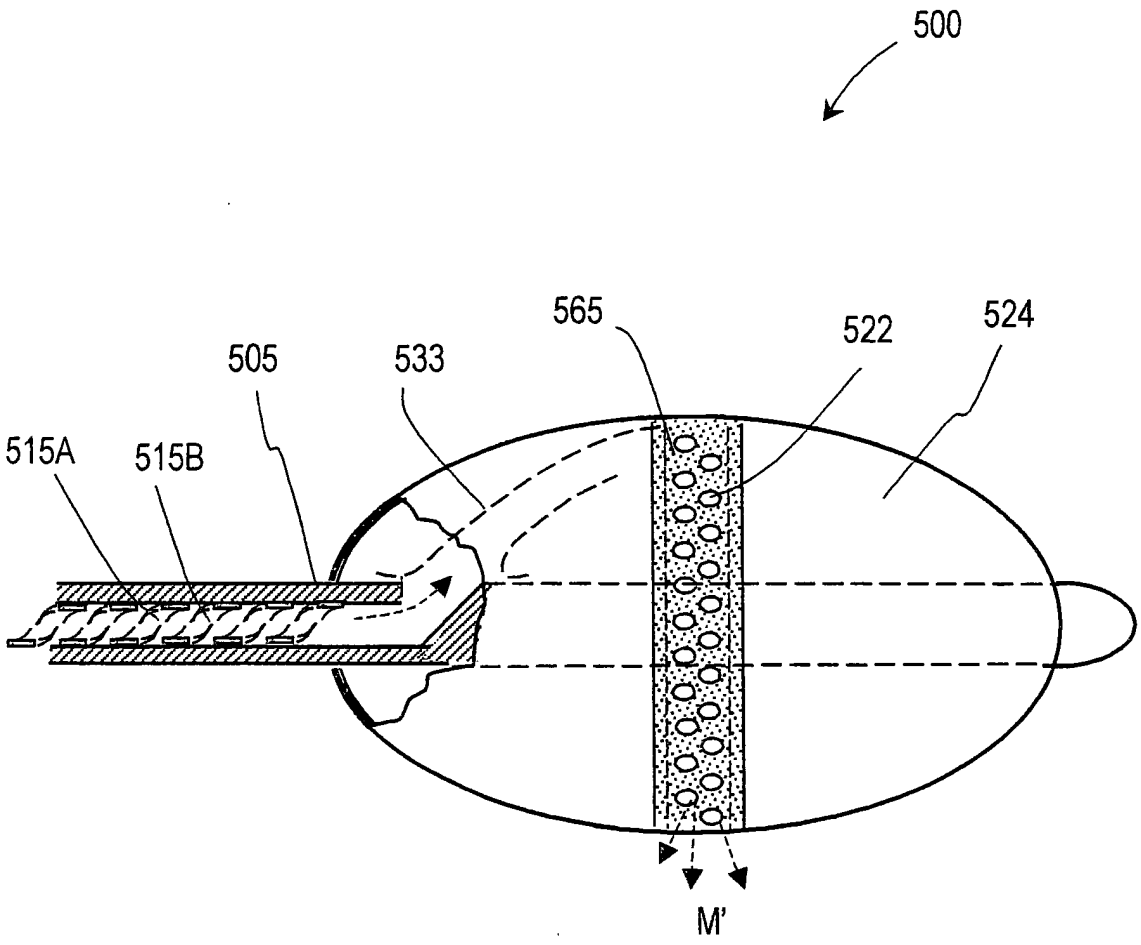


FIG. 20A

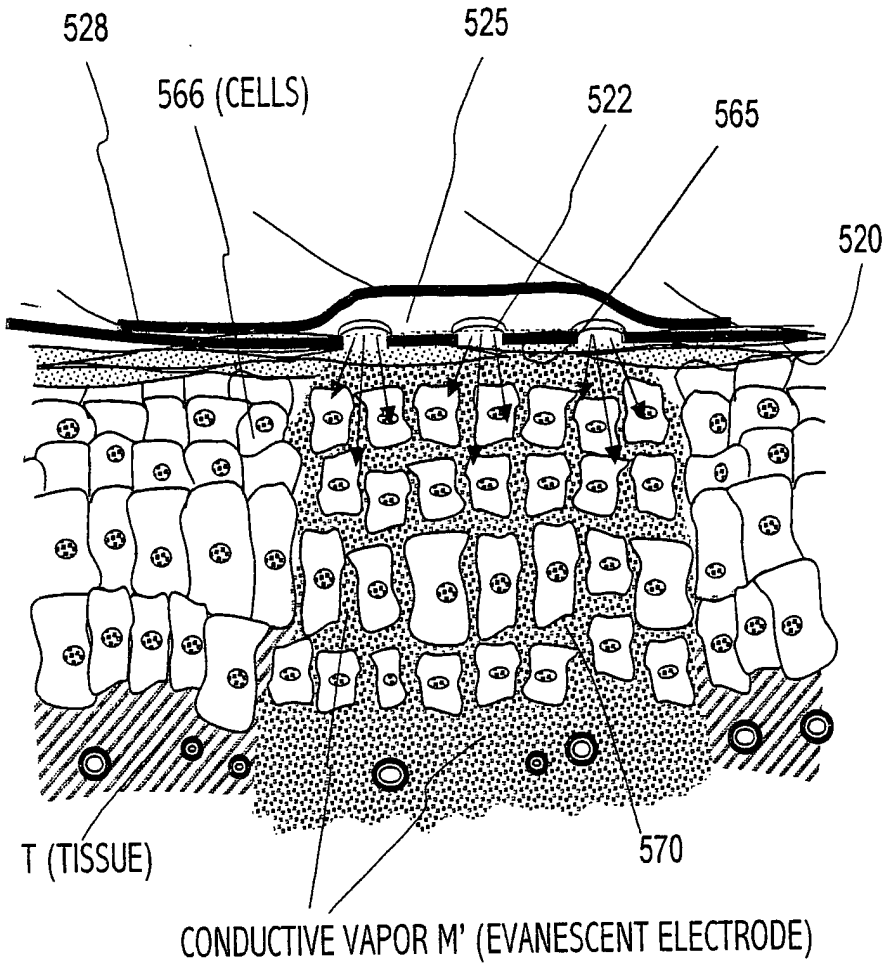

528
566 (CELLS)
525
522
565
520
T (TISSUE)
570
CONDUCTIVE VAPOR M' (EVANESCENT ELECTRODE)

FIG. 20B

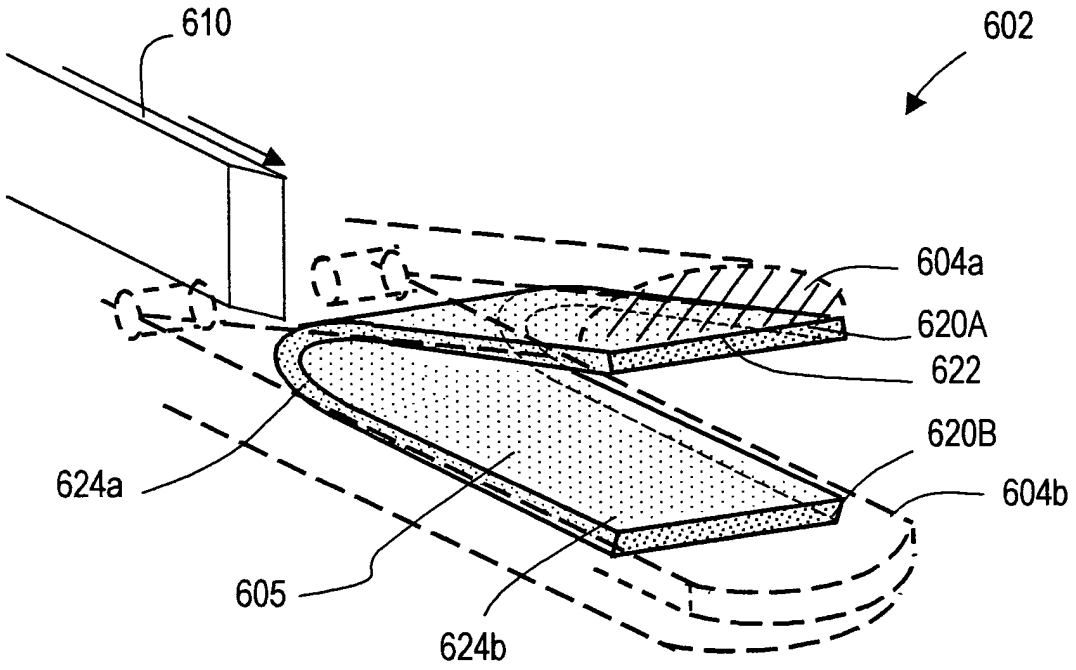


FIG. 21

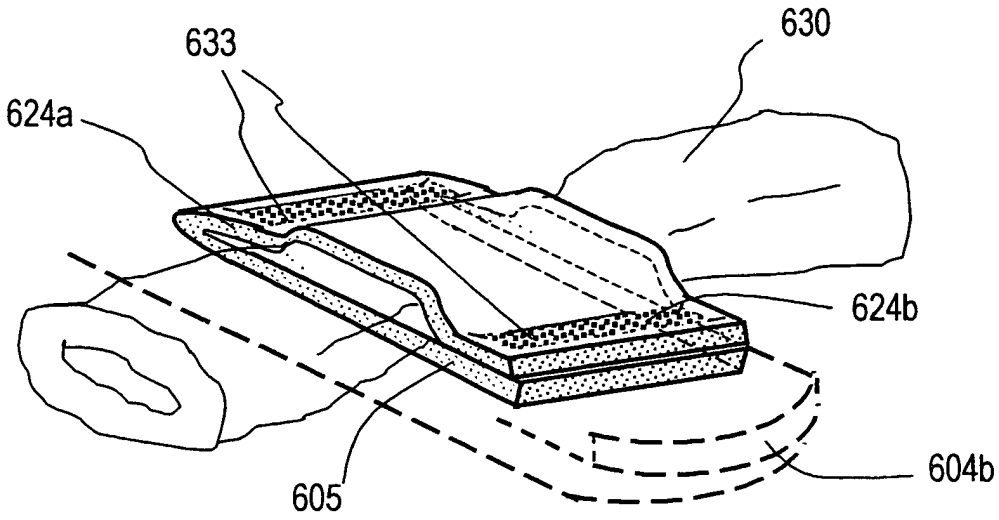


FIG. 22A

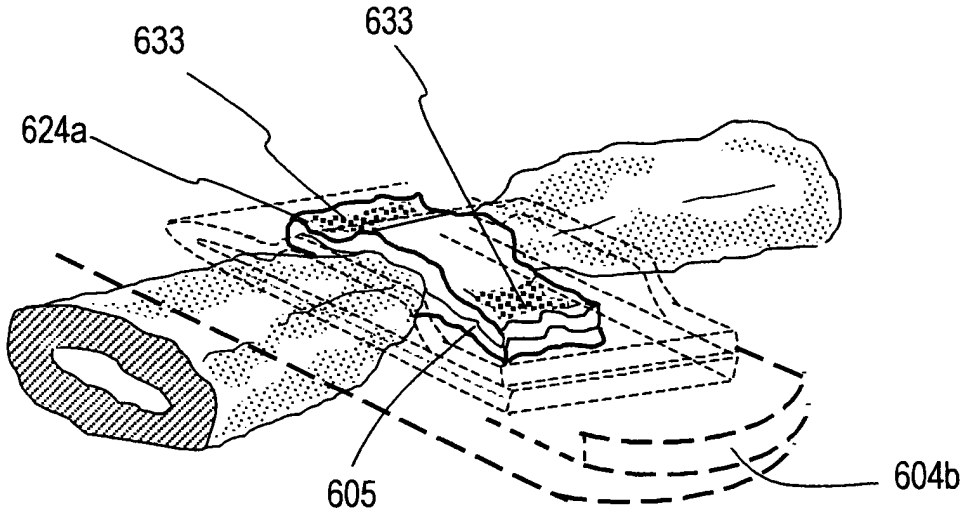


FIG. 22B